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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/871,561	05/31/2001	Hee-Sun Cho	678-667 (P9391)	1131

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EXAMINER

NOLAN, DANIEL A

ART UNIT	PAPER NUMBER
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2654

5

DATE MAILED: 05/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/871,561

Applicant(s)

CHO ET AL.

Examiner

Daniel A. Nolan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 May 2001.
- 2a) ☒ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☒ Claim(s) 5 and 6 are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Response to Amendment

2. The reply filed 12 February 2004 was applied as follows:
 - The specification was changed as indicated.
 - The claims were changed as indicated and examined on the merit.
 - Corrections to the drawings are accepted and the objections are withdrawn.

Response to Arguments

3. Applicant's arguments, see page 8 lines 6-22, filed 12 February 2004, with respect to claims 3-6 have been fully considered and are persuasive. The rejection of claims 3-6 has been withdrawn.
4. Applicant's arguments filed 12 February with regard to the need for precise terminology have been fully considered but they are not persuasive:
 - The objection to the title is maintained as not sufficiently differentiating between modes. A *suggested* title is provided to address this deficiency.

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- The objections to the use of the word "*voice*" where "*speech*" is appropriate are maintained, except in that instance where the compounded word sufficiently describes a feature or operation that is well-known in the art and is used in a context that would not be otherwise interpreted by a person of ordinary skill in the art.

Such is the case with the cited "*voice dialing*" which is more likely to describe the process of recognizing telephone numbers than identifying and connecting speakers solely by voice and was cited by the Examiner as a basis for understanding to avoid misapplying prior art as would otherwise be required – see MPEP section 2106, which cites in part:

"During patent examination the pending claims must be interpreted as broadly as their terms reasonably allow.... The reason is simply that during patent prosecution when claims can be amended, ambiguities should be recognized, scope and breadth of language explored, and clarification imposed.... An essential purpose of patent examination is to fashion claims that are precise, clear, correct, and unambiguous. Only in this way can uncertainties of claim scope be removed, as much as possible, during the administrative process."

That the terms may have been inappropriately used in commercial nomenclature or employed by the Office contrary to the cited classification does not provide justification for overlooking the requirement for precise terminology in the immediate application. Particularly where the terms have been employed in an incidental manner, lack of enforcement does not provide precedence for accepting the terms in such a way that would infringe on inventions that enable operations based on speaker recognition.

In this case, it is particularly important that the term "*voice function*" be distinguished from the well-known "*voiced-unvoiced*" decision process in speech recognition.

Specification

5. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: *"Dual-Mode Radio Mobile Terminal where Analog or Digital Mode is Determined by Voice Detection"*.

6. The disclosure is objected to because of the following informalities:

- "Cannot" should be 1 word (page 3 lines 21 & 24) for consistency (line 24).
- As maintained in accord with the opening statement of the prior action, the term "speech" should be used for "voice" (page 1 lines 26 & 28, page 2 line 3, page 3 line 7, page 6 line 22, page 7 line 24(2) and page 8 line 5).

Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1, 5 and 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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9. Where applicant acts as his or her own lexicographer to specifically define a term of a claim contrary to its ordinary meaning, the written description must clearly redefine the claim term and set forth the uncommon definition so as to put one reasonably skilled in the art on notice that the applicant intended to so redefine that claim term. *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1357, 52 USPQ2d 1029, 1033 (Fed. Cir. 1999). The term "*voice recognition*" in claims 1, 5 and 6 is used by the claim to mean "*speech recognition*", while the accepted meaning is "*speaker identification*."

The term is indefinite because the specification does not clearly redefine the term. The term "*voice recognition*" identifies individual speakers by the sound of their voice, while "*speech recognition*" derives meaning from utterances. This distinction is particularly important with regard to the instant application, where "*voice recognition*" is conventionally associated with "*analog mode*", while "*speech recognition*" is associated with "*digital mode*". See the U.S. manual of Classification, which categorizes these separately as class/subclasses 704/246 and 704/251, respectively.

Claim Rejections - 35 USC § 103

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

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not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Heidari^{'957} & Hoffman

11. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heidari^{'957} (U.S. Patent 5,790,957 A) in view of Hoffman (U.S. Patent 6,622,017 B1).

12. Regarding claim 1, the invention for *speech recall in cellular telephone* by Heidari^{'957} reads on the features of the claim for *operating a voice function for outputting a voice memo in a dual-mode radio mobile terminal* (column 1 lines 60-62), *the terminal including a vocoder* (taught at column 1 lines 33-37 & 43-47 as reason to be utilized in column 2 line 45) *for converting data between PCM format and packet format*.

Heidari^{'957} (column 8 lines 55-62) further reads on the steps of *determining whether a request for the voice function is input or not in analog mode* (70→58 in figure 1 – see column 4 lines 47-48 and column 8 lines 58-59), *switching the vocoder into digital mode to operate the voice function* and (column 8 lines 63-67) *operating the voice function in digital mode*.

Heidari^{'957} does not specifically include *speech recognition* as one of the supported voice operations. The invention for *over-the-air programming of wireless terminal features* by Hoffman (column 2 lines 50-51) reads on the feature *for including a voice recognition function* It would have been obvious to a person of ordinary skill in the

art of speech signal processing at the time of the invention to apply the method and/or teachings of Hoffman to the device/method of Heidari^{'957} so as to offer added service upgrades to provide additional revenue.

13. Regarding claim 2, the claim is set forth with the same limits as claim 1.

Heidari^{'957} (column 3 lines 35-50) reads on the feature that *the vocoder is switched from PCM mode to packet mode (as with route changing from analog to digital in column 3 line 45).*

Heidari^{'957}, Hoffman & Weaver, Jr., et al^{'673}

14. Claims 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heidari^{'957} in view of Hoffman and further in view of Weaver, Jr., et al^{'673} (US 5,956,673).

15. Regarding claim 3 as understood by the Examiner, the claim is set forth with the same limits as claim 2. While both Heidari^{'957} and Hoffman provide the means to switch between coding types, neither mention *returning the vocoder to PCM (for analog) mode if a call request is input during packet (for digital) voice operation.*

Weaver, Jr., et al^{'673}, with the invention for *detection and bypass of tandem "vocoding", read on the step of switching the vocoder back to PCM mode (400-408 in figure 8) if a call request is input during operation of the voice function in packet mode (column 7 lines 1-2).* It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method and/or

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teachings of Weaver, Jr., et al^{'673} to the device/method of Heidari^{'957} & Hoffman to transmit smaller amplitude signals when the wide dynamic range for speech is not required.

Allowable Subject Matter

16. Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

17. Claims 5 and 6 are allowed.

18. As allowable subject matter has been indicated, applicant's reply must either comply with all formal requirements or specifically traverse each requirement not complied with. See 37 CFR 1.111(b) and MPEP § 707.07(a).

19. The following is a statement of reasons for the indication of allowable subject matter:

- The present invention is directed to *changing to/from PCM automatically for speech*.
- Regarding claims 4, 5 and 6 as understood by the Examiner, the prior art of Weaver, Jr., et al disclose the process of *switching the vocoder from PCM mode to packet mode and back* in response to signal quality but the feature of *switching the vocoder*

back to PCM mode if the voice function is terminated was found to neither be anticipated nor was it found in obvious combination in the prior art of reference.

Conclusion

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Weaver, Jr., et al^{'862} (US 5,903,862 A) detection of tandem "vocoding" to modify vocoder filtering.
- Rabipour et al (US 6,363,339 B1) dynamic vocoder selection for storing and forwarding voice signals.

21. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

22. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Daniel A. Nolan at telephone (703) 305-1368 whose normal business hours are Mon, Tue, Thu & Fri, from 7 AM to 5 PM.

If attempts to contact the examiner by telephone are unsuccessful, supervisor Richemond Dorvil can be reached at (703)305-9645.

The fax phone number for Technology Center 2600 is (703)872-9314. Label informal and draft communications as "DRAFT" or "PROPOSED", & designate formal communications as "EXPEDITED PROCEDURE". Formal response to this action may be faxed according to the above instructions,

or mailed to: Mail Stop AF (or CPA, etc. – see Official Gazette, 04 November 2003)
P.O. Box 1450
Alexandria, VA 22313-1450

or hand-deliver to: Crystal Park 2,
2121 Crystal Drive, Arlington, VA,
Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to Technology Center 2600 Customer Service Office at telephone number (703) 306-0377.

DAN/d
April 25, 2004

Daniel A. Nolan
Examiner
Art Unit 2654


RICHEMOND DORVIL
SUPERVISORY PATENT EXAMINER